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XIII.—*On some Collections of Birds from the Protectorate of British Central Africa, received in 1899 and 1900.*
By Captain G. E. SHELLEY, F.Z.S. *With an Introduction*
by P. L. SCLATER, M.A., Ph.D., F.R.S.

Part I.—INTRODUCTORY NOTES. By P. L. SCLATER.

CAPTAIN SHELLEY, on the present, as on many former occasions, has kindly undertaken the task of naming and describing the specimens contained in several collections of birds from British Central Africa which have been transmitted to me in 1899 and 1900 by Mr. Alfred Sharpe, C.B., H.B.M. Commissioner, and by Lt.-Col. W. H. Manning, H.B.M. Deputy Commissioner, to whose united zeal and energy in continuing the good work projected and commenced by Sir Harry Johnston I have great pleasure in bearing testimony.

Mr. Alfred Sharpe, writing from Zomba, B.C.A., on January 18th, 1900, describes the series sent on that occasion as follows. It contains:—

- (a) My own collection of birds from Namaramba Lake, which lies N.E. of Zomba, some 70 miles distant. (Namaramba is at the source of the Lajenda River, and is about 1700 feet above sea-level.)

- (b) My own collection from the east side of Lake Mweru, 3000 feet above sea-level.
- (c) Some Milanje specimens secured by our hunters.
- (d) Some from Liwonde on the Upper Shiré River, about 1500 feet above the sea-level, from the same source.

Mr. J. McClounie, Chief of the Scientific Staff at Zomba, who visited England last year, has kindly supplied me with the following notes on the principal localities in which the specimens were obtained:—

Buwa or *Bua River*.—Kotakota is near or at the mouth of the Bua, which is a large river and drains a considerable tract of country from the Anglo-Portuguese western boundary. Mr. Sharpe, I think, went in at Kotakota and travelled south-west and south to the Angoniland country. I have only been to the upper reaches of the Bua, at the 14th parallel of South latitude, which point I fixed in 1896. Specimens from this district are likely to be from latitudes 13° to $13^{\circ} 30'$.

Chikala Mountain.—Mount Chikala lies about 24 miles to the E.N.E. of Zomba, on the shores of Lake Shirwa. The lake itself is 1700 feet above the sea-level, and the top of Chikala (by aneroid) comes near 5548 feet. If I remember rightly, numerous aquatic birds are to be found there, while on the top and in the ravines many warblers may be heard. Though not rising quite so high as Zomba, and not so extensive, it is practically the last hill of note in our territory of the chain of hills running north from Zomba.

Chiuta Lake.—Lake Chiuta is further east than Mount Chikala, but also more to the north. This small lake is considered by most people to be a continuation of Lake Shirwa, as it is separated from it by only a few miles of land, evidently composed of silt. There are many birds to be had there, as well as other game, amongst which the Gnu is abundant. It is on the Anglo-Portuguese boundary.

Dedza or *Deza* is a mountain in Central Angoniland on the Portuguese frontier, about 7000 feet in altitude.

Ikawa.—Ikawa, on the Tanganyika plateau, near Fife, is said to be rich in birds.

Kachinda is in Angoniland, near the S.W. corner of Lake Nyasa.

The *Karungwesi* or *Kalungwizi* is a river running into the eastern side of Lake Mweru.

Kikomba or *Kuikomba* is on the Nyasa-Tanganyika plateau, halfway between Nyasa and Tanganyika.

Katunga is on the Lower Shiré River.

Liwonde (lat. $15^{\circ} 2' S.$, long. $35^{\circ} 16' E.$).—Liwonde is a Government Station on the River Shiré, north of Zomba, and probably about 1000 ft. above the sea-level. It is in the midst of the Shiré plain, and is at all times damp and moist, the excessive heat being sometimes over 110° Fahr. in the shade in November, December, and January. Most of the specimens were collected by our hunters, but some by Mr. J. B. Yule. Birds and mammals of all kinds are to be found there. Aquatic birds are most prominent, and are chiefly seen from the steamer plying up and down this part of the river, as, owing to the extremely tall grass, it is very difficult to go through the bush.

Mambwe and *Mbara* are native villages on the plain between Zomba and Milanji. They are situated along the banks of the River Palombe, which runs into Lake Shirwa some 10 miles or so from Chikala. As along most other streams of the plain, birds are numerous where the shade is dense and they can get shelter from the sun, which in October and the following two months is very hot.

Mlange or *Milanji* is a well-known mountain in about lat. $15^{\circ} 50' S.$, long. $35^{\circ} 45' E.$.—All of the specimens from this locality are from the Tutchila plateau (altitude between 4000 and 7000 ft.), and were mostly obtained in the cedar-forests that abound on it. There are numerous deep ravines which abound with animal life, principally birds, although a few bush-bucks have recently taken up their quarters in the cedar-forests. Black monkeys are frequently seen in the woods, and sometimes the deep tones of a leopard are heard.

Mtonga is a country on the west side of Lake Nyasa, about halfway up.

Mwero Lake.—Lake Mwero or Mweru is to the west of Lake Tanganyika, and some distance from Abercorn, which is the capital of the Nyika plateau.

Namaramba Lake.—This lake is N.E. of Lake Chiuta, in Portuguese territory. It is marked Lake Amaramba in some maps.

Namasi or *Namadzi* (from "madzi" = water) is a district lying between Zomba and Blantyre. It is mostly undulating country, with numerous small streams. Although there is one that bears the same name, yet there are many smaller streams in the district, flowing towards Lake Shirwa, which are superior to it, as they do not dry up so soon as the Namadzi. On the Shirwa plain the Namadzi is more often found with a dry bed than with water in it. The specimens labelled thus are probably from the lower reaches, near to the Palombe.

Palombe River.—This river flows into Lake Shirwa towards its southern end.

Zomba (lat. $15^{\circ} 22'$ S., long. $35^{\circ} 17' 45''$ E.).—The specimens from this place are, for the most part, captured along the southern slopes. Birds are very numerous; bush-bucks are common on the top of the mountain, as also are wild dogs, whose frequent visits to the plateau are to be deplored, as they play dreadful havoc with the bush-bucks.

The series submitted to Capt. Shelley on this occasion contained about 285 specimens, which he refers to 140 species. Although none of these are new to science, several (as will be seen by the notes) are new to the Avifauna of Nyasaland.

Of the whole series, 222 specimens have been selected for the British Museum, and the remainder will be sent to the South-African Museum, Cape Town.

Capt. Shelley informs me that, including the present additions, 471 species of birds are now known from the Protectorate of British Central Africa.

Part II.—LIST OF THE SPECIES WITH LOCALITIES. By G. E. SHELLEY.

[Explanatory notes on species marked with an asterisk are given in Part III.]

Name.	No. in Shelley's B. of Afr.	Localities.
*1. <i>Parus niger</i>	117	Liwonde.
2. — <i>parvirostris</i>	124·6	Katunga.
*3. <i>Motucilla flava</i>	150	Chiuta.
4. <i>Anthus rufulus</i>	165	Milanji and Namaramba.
5. <i>Macronyx croceus</i>	170	Namaramba. [Karungwesi.
6. <i>Passer diffusus</i>	268	Kachinda (in Angoniland) and
7. <i>Serinus icterus</i>	285	Palombe.
8. <i>Hypochera funerea</i>	309	Dedza in Angoniland.
9. <i>Vidua principalis</i>	312	Dedza.
10. <i>Coliopasser albonotatus</i>	321	Dedza.
11. — <i>macrurus</i>	324	Dedza.
12. <i>Urobrachya axillaris</i>	328	Karungwesi.
13. <i>Pyromelana flammiceps</i>	338	Angoniland.
14. <i>Quelea quelea</i>	350	Mwero.
15. <i>Estrilda subflava</i>	404	Mwero and Karungwesi.
*16. — <i>poliogastra</i>	418	Karungwesi. [and Mwero.
17. <i>Hypargus niveiguttatus</i>	444	Mtonga in Angoniland, Karungwesi
*18. <i>Anaplectes erythrogenys</i>	476·5	Chiuta.
19. <i>Sycobrotus stictifrons</i>	504	Milanji and Angoniland.
20. <i>Hyphanturgus ocularius</i>	520	Kikomba and Liwonde.
21. <i>Xanthophilus xanthopterus</i>	529	Angoniland.
22. — <i>xanthops</i>	538	Palombe.
*23. <i>Hyphantornis shelleyi</i>	543	Dedza.
24. <i>Oriolus notatus</i>	570	Ikawa, Kikomba, and Mambwe.
25. — <i>larvatus</i>	572	Mtonga. [Mbara.
26. <i>Pholidauges verreauxi</i>	581	Ikawa, Karungwesi, Kikomba, and
27. <i>Lamprocornis mevesi</i>	590	Dedza and Liwonde.
28. <i>Lamprocolius sycobius</i>	600	Chikala.
29. <i>Amydrus morio</i>	616	Milanji.
30. <i>Dilophus carunculatus</i>	630	Liwonde.
31. <i>Dierurus afer</i>	646	Liwonde and Milanji.
32. <i>Prionops talaoma</i>	666	Liwonde and Buwa.
33. <i>Sigmodus tricolor</i>	672	Mtonga country.
34. <i>Campophaga niger</i>	675	Chiuta and Karungwesi.
35. <i>Graucalus pectoralis</i>	681	Mtonga.
36. <i>Fiscus collaris</i>	693	Dedza.
37. <i>Enneactonus collaris</i>	709	Chiuta, Karungwesi, and Mbara.
38. <i>Laniarius mosambicus</i>	723	Chikala, Ikawa, Karungwesi, and Kikomba.
39. <i>Dryoscopus cubla</i>	742	Dedza, Karungwesi, and Milanji.
40. <i>Bocagia anchieta</i>	750	Karungwesi and Kikomba.
41. <i>Telephonus senegalus</i>	751	Karungwesi.
42. <i>Malaconotus sulphurepectus</i>	769	Chiuta and Karungwesi.
*43. — <i>sturki</i>	778	Karungwesi.
*44. <i>Crateropus tanganjicæ</i>	793	Mambwe.
45. — <i>kirki</i>	795	Liwonde.

Name.	No. in Shelley's B. of Afr.	Localities.
*46. <i>Crateropus hartlaubi</i>	806	Karungwesi and Kikomba.
47. <i>Criniger fusciceps</i>	880	Liwonde and Milanji.
48. <i>Chlorocichla occidentalis</i>	886	Liwonde.
49. <i>Phyllostrephus strepitans</i>	896	Karungwesi and Palombe.
50. — <i>cerviniventris</i>	901	Likangala in Angoniland.
51. <i>Cisticola ruficapilla</i>	1039	Milanji.
*52. — <i>erythropros</i>	1052	Karungwesi. [Kikomba.
53. <i>Cichladusa arcuata</i>	1160	Kachinda in Angoniland and
54. <i>Cossypha natalensis</i>	1164	Liwonde.
55. — <i>caffra</i>	1165	Milanji.
56. — <i>heuglini</i>	1171	Chikala.
57. <i>Bessonornis modesta</i>	1182-5	Dedza.
58. <i>Pratincola torquata</i>	1192	Kachinda and Karungwesi.
59. <i>Turdus stormsi</i>	1225	Mbara.
60. <i>Saxicola livingstonei</i>	1255	Liwonde.
61. <i>Thamnolæa arnotti</i>	1283	Mambwe and Mweru.
62. <i>Muscicapa grisola</i>	1308	Dedza.
63. <i>Platystira peltata</i>	1357	Milanji.
64. <i>Hirundo rustica</i>	1413	Angoniland.
65. — <i>monteiri</i>	1436	Mweru.
*66. <i>Psalidoprocne orientalis</i>	Zomba.
*67. — <i>albiceps</i>	1448	Karungwesi and Mambwe.
*68. <i>Cypselus alfredi</i>	Mbara.
69. <i>Melittophagus meridionalis</i>	1524	Liwonde, Ikawa.
70. <i>Merops persicus</i>	1537	Dedza and Likangala.
71. — <i>natalensis</i>	1543	Chikala, Liwonde.
72. <i>Rhinopomastes cyanomelas</i>	1559	Lake Mweru.
73. <i>Bycanistes buccinator</i>	1566	Angoniland.
74. <i>Lophoceros melanoleucus</i>	1579	Karungwesi.
75. — <i>epirhinus</i>	1582	Angoniland and Liwonde.
76. <i>Ceryle rudis</i>	1599	Milanji and Namaramba.
77. <i>Corythornis cyanostigma</i>	1606	Liwonde, Mbara, and Lake Mweru.
*78. <i>Halecyon hyacinthinus</i>	1616	Dedza and Milanji.
79. — <i>cyanoleuca</i>	1622	Chiuta.
*80. <i>Colinus affinis</i>	1635	Dedza.
81. <i>Gymnoschizorhis leopoldi</i>	1666	Lake Mweru.
82. <i>Ceuthnochaes australis</i>	1681	Milanji.
83. <i>Centropus nigrorufus</i>	1683	Angoniland.
84. <i>Coccyzus glandarius</i>	1692	Karungwesi and Mweru.
85. — <i>cafer</i>	1696	Karungwesi.
*86. <i>Cuculus canorus</i>	1702	Lake Mweru.
87. <i>Chrysococcyx klaasi</i>	1711	Karungwesi.
88. <i>Indicator major</i>	1714	Lake Mweru.
89. <i>Smilorhis sowerbyi</i>	1759-5	Dedza. [Mweru.
*90. <i>Trachyphonus cafer</i>	1783	Ikawa, Karungwesi, and Lake
91. <i>Camptothera caillaudi</i>	1811	Kachinda.
92. <i>Vinago delalandi</i>	1854	Liwonde.
93. <i>Columba arquatrix</i>	1861	Milanji.
94. <i>Haplopelia johnstoni</i>	1871	Milanji.

Name.	No. in Shelley's B. of Afr.	Localities.
95. <i>Pæoccephalus fuscicapillus</i>	1906	Liwonde.
96. <i>Glaucidium capense</i>	1950	Lake Mweru.
*97. <i>Scops capensis</i>	1958	Mambwe.
98. <i>Bubo lacteus</i>	1967	Karungwesi.
99. <i>Elanus cæruleus</i>	2009	Liwonde.
100. <i>Haliaëtus vocifer</i>	2014	Dedza and Kachinda.
101. <i>Helotarsus ecaudatus</i>	2016	Dedza and Liwonde.
102. <i>Nisaëtus spilogaster</i>	2026	Zomba.
103. <i>Lophoaëtus occipitalis</i>	2030	Angoniland.
104. <i>Circaëtus cinerascens</i>	2039	Liwonde.
105. <i>Accipiter melanoleucus</i>	2074	Mtonga.
106. <i>Polyboroides typicus</i>	2084	Dedza.
107. <i>Herodias ralloides</i>	2110	Namaramba.
108. <i>Butorides atricapilla</i>	2126	Lake Mweru.
109. <i>Ardetta podiceps</i>	2132	Lake Mweru.
110. <i>Tantalus ibis</i>	2145	Angoniland.
111. <i>Plotus rufus</i>	2154	Lake Mweru.
112. <i>Hydrochelidon leucoptera</i>	2167	Angoniland.
113. <i>Rhynchops flavirostris</i>	2195	Angoniland.
114. <i>Larus cirrhocephalus</i>	2205	Chikala.
115. <i>Nettapus auritus</i>	2257	Kachinda and Namaramba.
116. <i>Dendrocyena fulva</i>	2260	Angoniland.
117. <i>Chenalopex ægyptiaca</i>	2261	Angoniland and Mweru.
118. <i>Anas undulata</i>	2266	Angoniland.
*119. <i>Querquedula capensis</i>	2272	Mbara.
120. — <i>punctata</i>	2273	Namaramba and Mbara.
121. <i>Pæcilonetta erythrorhyncha</i>	2275	Liwonde.
122. <i>Thalassornis leuconota</i>	2284	Namaramba.
123. <i>Podiceps capensis</i>	2288	Mbara.
*124. <i>Fulica cristata</i>	2295	Mbara.
125. <i>Porphyrio porphyrio</i>	2296	Namaramba.
126. <i>Limnocorax niger</i>	2312	Karungwesi and Mbara. [Mweru.
127. <i>Coturnix delegorguei</i>	2332	Angoniland, Karungwesi, and
128. <i>Francolinus johnstoni</i>	2379	Milanji.
129. <i>Phyllopezus africana</i>	2441	Karungwesi.
130. <i>Microparra capensis</i>	2443	Namaramba.
131. <i>Hoplopterus speciosus</i>	2452	Karungwesi.
132. <i>Stephanibyx coronatus</i>	2453	Angoniland, Chiuta, and Mweru.
133. — <i>inornatus</i>	2455	Chikala.
134. <i>Vanellus leucopterus</i>	2458	Namaramba.
*135. <i>Totanus ochropus</i>	2492	Milanji.
136. — <i>hypoleucus</i>	2494	Karungwesi and Mbara.
137. <i>Gallinago nigripennis</i>	2498	Lake Mweru.
138. <i>Himantopus himantopus</i>	2503	Mbara and Lake Mweru.
139. <i>Edicnemus vermiculatus</i>	2510	Lake Mweru.
*140. <i>Glareola nuchalis</i>	2530	Lake Mweru and Karungwesi.

Part III.—NOTES ON SOME OF THE SPECIES.

By G. E. SHELLEY.

1. PARUS NIGER Vieill.

Parus niger Shelley, B. Afr. ii. p. 232 (1900).

The collection contains an adult pair of this species from Liwonde, which is the most northern range known to me for it. It is apparently replaced in German East Africa, north of Nyasaland, by *P. fuelleborni* Reichen. (Orn. Monatsb. 1900, p. 5). The Tits are well represented in Nyasaland, and the following key may serve to identify the seven forms found within the British Central-African Protectorate:—

- a.* Bill stout and rather blunt; crown and most of the head black..... *Parus.*
*a*¹. Entire head black; a large amount of white on the wings. "
*a*². Breast black or deep grey.
*a*³. Dark parts glossy blue-black; no white on under tail-coverts *insignis.*
*b*³. Body never blue-black, unless there are white margins to under tail-coverts.
*a*⁴. Crown glossed with blue; inside of mouth black..... *niger.*
*b*⁴. Crown glossed with green; inside of mouth bright yellow *xanthostomus.*
*b*². Breast cinnamon *masukuensis.*
*c*². Breast buff *pallidiventris.*
*b*¹. Head with a patch of white *parvirostris.*
- b.* Bill wedge-shaped and very sharply pointed.
 Very tiny bird: above mouse-colour; throat white; abdomen tawny buff..... *Aegithalus caroli.*

I have nothing to add to what I have written regarding these Tits (B. Afr. ii.) except that the *P. afer* of Sclater, P. Z. S. 1900, p. 2, may be referred to the small-billed subspecies *P. parvirostris*.

3. MOTACILLA FLAVA Linn.

Motacilla cinericapilla Shelley, Ibis, 1899, p. 282, Zomba.

I here include the name *M. flava* for the first time in the Avifauna of Nyasaland. The specimen in this collection

* The numbers refer to those of the species in Part II.

is immature, like that previously recorded from Zomba as *M. cinereicapilla*. They probably both belong to the same subspecies, but in such a state of plumage it is not possible to decide positively to which of the allied forms they should be referred.

16. *ESTRILDA POLIOGASTRA* (Reichen.).

Habropyga polioastra Reichen. J. f. O. 1886, p. 121, Inhambani.

Estrilda incana (nec Sundev.) Shelley, Ibis, 1899, p. 368, Tanganyika plateau.

The specimen from the Tanganyika plateau was in such bad condition that I referred it to *E. incana*, being unable to see in what way it differed from Natal birds; but with the second example before me I consider Dr. Reichenow justified in recognising this subspecies. It differs from *E. perreini* and *E. incana* in the red of the rump and upper tail-coverts being duller and darker, and is intermediate between these two in the greyish-black colouring of the abdomen and under tail-coverts.

The grey group of *Estrildæ* comprises about six nearly allied forms, all apparently very local: *E. carulescens* from Senegambia; *E. thomensis* probably confined to the island of St. Thomas; *E. perreini* from the Lower Congo; *E. cinereovinacea* from Benguela; *E. incana* from Natal; while the present species replaces its allies in South-eastern Tropical Africa, from Inhambani to the Tanganyika plateau.

18. *ANAPLECTES ERYTHROGENYS*.

Calyphantria erythrogenys Fisch. & Reichen. J. f. O. 1884, p. 181.

Anaplectes rufigena Shelley, B. Afr. ii. p. 341 (1900).

This species is very closely allied to *A. melanotis*, from which it differs in the cheeks being red instead of black. I made the present specimen the type of a new species (*A. rufigena*), overlooking the fact that the name *Calyphantria erythrogenys* had been applied to it. It is the only representative of this form in the British Museum. In Nyasaland

there is a third species of the genus, *A. gurneyi*, easily distinguished by having the edges of the quills yellow instead of red.

23. *HYPHANTORNIS SHELLEYI* Sharpe.

Mr. Alfred Sharpe sends examples of this species from Katunga and Dedza—its most northern-known range. It is probably not uncommon in Southern Nyasaland, for there are six specimens in the British Museum from Tete on the Zambesi.

43. *MALACONOTUS STARKI* (Scl.).

Malaconotus blanchoti (nec Steph.) Shelley, B. Afr. i. no. 778.

Laniarius starki Scl. Ibis, 1901, p. 153.

The name *M. blanchoti* Steph. does not apply to this species, for the type of the former, which is the same as that of "*La Pie-grièche Blanchot*" of Levaillant, was obtained by Blanchot in Senegal and belongs to *M. polionotus* (Licht.). Mr. W. L. Selater has proposed to call it *M. starki*, in memory of the late Dr. A. C. Stark, author of the first volume of the 'Birds of South Africa.'

44. *CRATEROPUS TANGANJICÆ* Reichen. J. f. O. 1886, p. 115, pl. 3. fig. 1.

Mambwe is the most southern range known for this rare and apparently very local species. I believe that this is the first specimen of it that has ever arrived in England. It is closely allied to *C. kirki*, from which it differs chiefly in the great amount of black on the head.

46. *CRATEROPUS HARTLAUBI* Bocage.

The occurrence of this species at Karungwesi and Kikomba greatly extends its known range. It is represented in the British Museum by specimens from Benguela and the Cunene River, and by one obtained by Dr. Bradshaw, without any locality on the label of the specimen, which, however, was probably procured in the country between the Orange and Zambesi Rivers.

52. *CISTICOLA ERYTHROPS* (Hartl.).

This is the most southern range known to me for this

species. It has been recorded in German East Africa from the Arusha country, and ranges through West Africa from the Congo to Senegambia.

On placing this skin between the series of *C. cinerascens* and *C. erythrops* in the British Museum I observed that it formed a good connecting link.

66. *PSALIDOPROCNE ORIENTALIS*.

Psalidoprocne petiti orientalis Reichen. J. f. O. 1889, p. 277, Usambara.

Psalidoprocne percivali Grant, B. O. C. viii. p. lv. (1899), Ruo R.

I enter this species in the present list because there is a specimen in the British Museum procured by Mr. Alexander Whyte at Zomba in January 1893. I did not record it at the time, as I hoped to see more specimens from Nyasaland. *P. antinorii* from North-east Africa was the nearest ally known to me, for I was unable to recognise it as *P. petiti orientalis* Reichen. from the original description, and I forgot all about it until Mr. Ogilvie Grant described the species, from a brighter specimen, as *P. percivali*. On referring to the key to the Swallows given by Dr. Reichenow, Vög. O.-Afr. p. 144, there can be no doubt that the oldest name for the species is *P. orientalis*.

Besides the two specimens above mentioned there is another in the British Museum labelled “♂, 20.9.98 Cherin-gana district, Mosambique (H. S. H. Cavendish),” so that the species ranges from 5° to 20° S. lat. To the north, in British East Africa, there is found *P. orientalis* (nec Reichen.), Sharpe, Ibis, 1892, p. 306, readily distinguished from the true *P. orientalis* by having the axillaries and under wing-coverts pale brown, and I imagined that this would prove to be a new species with little gloss on the plumage like the young bird from Taveta—*P. petiti* (nec Sharpe & Bouvier), Shelley, P. Z. S. 1889, p. 359; but I find Mr. Jackson’s birds, nine in number, from Mount Elgon, the Ravine, Nandi, and Mau to be identical with examples of the species from the Knysna and Natal, which is also represented in the British

Museum by one from the Transvaal and one from Mamboio (P. Z. S. 1882, p. 306), therefore *P. holomelæna* should occur in British East Africa; and the following key may be useful:—

- a. No pure white on the plumage.
- a^1 . Tail square..... *nitens*.
- b^1 . Tail strongly forked.
- a^2 . General plumage black glossed with green; axillaries and under wing-coverts dusky drab.
- a^3 . Gloss more golden green. Wing 3·65 to 3·8 in. *obscura*.
- b^3 . Gloss more bluish green. Wing 3·8 in. *chalybæa*.
- c^3 . Gloss more olive-green. Wing 4·3 to 4·7 in... *holomelæna*.
- b^2 . General plumage bronze-brown; under wing-coverts scarcely paler. Wing 4·25 in. *fuliginosa*.
- c^2 . General plumage sooty brown; axillaries and under wing-coverts brownish white *petiti*.
- b. Pure white confined to the entire axillaries and under wing-coverts.
- c^1 . General plumage browner and less strongly glossed.
- d^2 . Glossed with bronze-brown..... *antinorii*.
- e^2 . Glossed with green *orientalis*.
- d^1 . General plumage blacker, with a very strong gloss.
- f^2 . Glossed with green *blanfordi*.
- g^2 . Glossed with blue *pristoptera*.
- c. White confined to head, which is mostly white in adults *albiceps*.

67. PSALIDOPROCNE ALBICEPS Scl.

This is the first time this species has been recorded from so far south as Nyasaland. It ranges northward to Wadelai on the Upper White Nile and the Ulu Mountains in Ukambani.

68. CYPSELUS ALFREDI Shelley.

Cypselus alfredi Shelley, B. Afr. ii. p. 345 (1900).

Nearly allied to *C. æquatorialis*, but slightly larger and darker. General plumage blackish brown, with a slight greenish gloss, fading into white on the chin and upper throat; feathers of the back with almost obsolete pale edges; crop and under surface of body with indistinct narrow white edges to the feathers, inclining to spots on the abdomen and sides of the body; axillaries and some of the larger under wing-coverts with narrow white terminal edges; outer under

wing-coverts edged with buff, giving them a regular scaled appearance. Total length 10·2 inches; culmen 0·4; wing 7·9; tail, outer feathers 3·5, centre feathers 2·4; tarsus 0·6.

78. HALCYON HYACINTHINUS Reichen.

Halcyon hyacinthinus Reichen. J. f. O. 1900, p. 216.

In 1896, when I published my list of African birds, I recognised only two species belonging to this group, *H. semicæruleus* Forskål and *H. pallidiventris* Cab. The latter name cannot rightly supplant that of *H. swainsoni* Smith, S. Afr. Quart. Journ. 1834, vol. ii. p. 143, which certainly refers to the pale form that inhabits the Cape Colony district, but is very indifferently described.

If we recognise *C. erythrorhynchus* Gould from the Cape Verde Islands as a subspecies of *H. semicæruleus*, we should be equally bound to regard *H. hyacinthinus* Reichen. as a subspecies of *H. swainsoni*, extending over the north-eastern range of that species northward from Mashoualand. The sole characters I can find for these subspecies may be summed up in the following key:—

- a. Abdomen and under wing-coverts deep chestnut *semicæruleus*.
- a¹. Average size of bill slightly smaller; head and neck paler Subsp. *erythrorhynchus*.
- b¹. Average size of bill slightly larger; head and neck darker Subsp. *semicæruleus*.
- b. Abdomen and under wing-coverts orange-buff. *swainsoni*.
- c¹. Above darker; mantle nearly jet-black; a rather deeper shade on the glossy blue parts Subsp. *hyacinthinus*.
- d¹. Above paler, especially the scapulars Subsp. *swainsoni*.

In the British Museum there are—♂, 19.12.84 Salisbury, and a good series from the Zambesi and Nyasa district belonging to *H. swainsoni hyacinthinus*: while ♀, 21.9.83 Potchefstroom; ♀? Gurnah (Oates); ♀, 22.12.65 Ondonga; and one of Monteiro's specimens from Benguela, belong to typical *H. swainsoni*. One of Jameson's specimens, labelled "Umvuli R., ♀, 2.10.80," is intermediate between these two subspecies.

80. *COLIUS AFFINIS* Shelley.

Colius striatus (nec Gm.) Shelley, Ibis, 1897, p. 545, Nyika, Ukala Bay and Fort Hill; 1898, p. 555, Karonga, Nkata.

Colius affinis Shelley, Ibis, 1899, p. 276, Ikawa and Fife.

The specimens from the above-mentioned localities belong to *C. affinis*, as well as two in the present collection from Dedza in Angoniland; but one of the latter has not got the characteristic pale mark on the upper mandible, which is entirely black as in *C. striatus*. Possibly this may be a hybrid, as Mr. Alexander Whyte procured at Zomba, some 50 miles south, a typical example of *C. striatus*.

Owing to *Sigmodus tricolor* and *S. graculinus* apparently interbreeding at the Pangani River, I had considered these two forms to belong to one species (see P. Z. S. 1881, p. 581); Mr. Oscar Neumann, in his article on the genus *Sigmodus* (Orn. Monatsb. 1899, p. 91), takes a different view of this matter, and probably a more correct one than I did in 1881, when subspecies were not so readily admitted.

86. *CUCULUS CANORUS* Linn.

This collection contains the first examples of the Common Cuckoo we have received from Nyasaland. They are two immature birds in the rufous plumage, but one of them is mottled with apparently fresh grey feathers as if it was about to discard the rufous for the ordinary plumage.

90. *TRACHYPHONUS CAFER* (Vicill.).

These specimens come from the most northern locality known for typical examples of this species. It ranges south into Zululand and Natal, the latter country being its most western limit. In German East Africa it is replaced by a nearly allied subspecies, *T. suahelicus* Reichen.

97. *SCOPS CAPENSIS* Smith.

This Owl is distributed over the whole of South Africa, but it is a rare bird in collections. This is the first time it has been recorded from Nyasaland.

119. *QUERQUEDULA CAPENSIS* (Gm.).

Although this species has not been previously recorded

from Nyasaland, it is distributed over the whole of South Africa and Eastern Africa up to Abyssinia.

124. *FULICA CRISTATA* Gm.

The Crested Coot, here recorded from Nyasaland for the first time, ranges over South, East, and North Africa into Madagascar and Southern Europe.

135. *TOTANUS OCHROPUS* (Linn.).

The Green Sandpiper, though here recorded for the first time from Nyasaland, is generally distributed throughout Africa.

140. *GLAREOLA NUCHALIS* Gray.

Glareola nuchalis Reichen. Vög. Afr. i. p. 147 (1900).

This species is new to Nyasaland, but was previously known to range from Camaroons eastward to Southern Abyssinia, and southward to the Zambesi.

It is represented in the British Museum by the types of *G. nuchalis* and *G. emini* from the White Nile and by specimens labelled: "Didesa R., Abyssinia, ♀, 21.3.99 (Lord Lovat)," and "Between Zurubo and Lufue R., ♀, 9.11.99 (Boyd Alexander)."

Dr. Reichenow (*l. c.*) informs us that *G. marcheii* Oust., 1877, also belongs to this species and is not, as I had imagined, the oldest name (provided with a description) for the nearly allied form from the Niger and Liberia, the *G. nuchalis liberiae* Sehl., 1881.

APPENDIX. By G. E. SHELLEY.

I may here add a few notes on a small collection of birds from the Shiré district, made for Lt.-Col. W. H. Manning, H.B.M. Deputy Commissioner for British Central Africa, by hunters belonging to the Scientific Department at Zomba, attached to the Anglo-Portuguese Boundary Commission who are now engaged in settling the eastern frontier of the British Central African Protectorate.

The following 16 species are represented in this collection:—

1. *ORIOLOUS LARVATUS* (Shelley, Cat. p. 41).
Banda, 14° 45' S. lat., 34° 53' E. long. Native name :
"Hisundambawala."
2. *PHOLIDAUGES VERREAUXI* (Shelley, Cat. p. 42).
Limawasi, 14° 49' 30" S. lat., 34° 57' E. long.
3. *LAMPROTORNIS MEVESI* (Shelley, Cat. p. 42).
Shiré R., 15° 3' 10" S. lat., 31° 8' E. long.
4. *LAMPROCOLIUS SYCOBIUS* (Shelley, Cat. p. 43).
Shiré R. Native name : "Likwirine."
5. *FISCUS COLLARIS* (Shelley, Cat. p. 51).
Fort Mlangeni, 14° 41' 10" S. lat., 34° 37' 20" E. long.
Native name : "Mwiyo."
6. *CORACIAS CAUDATUS* (Shelley, Cat. p. 109).
Shiré R., 15° 3' 10" S. lat. Bill black, legs yellow.
7. *MEROPS NATALENSIS* (Shelley, Cat. p. 111).
Shiré R. Bill black; legs slaty blue.
8. *IRRISOR VIRIDIS* (Shelley, Cat. p. 112).
Shiré R. Bill and legs red.
9. *COLIUS AFFINIS* (Shelley, Cat. p. 118).
Fort Mlangeni. Legs red. Native name : "Pasapanza."
10. *VINAGO DELALANDEI* (Shelley, Cat. p. 134).
Banda. Bill white; legs red. Native name : "Nyandi."
11. *TYMPANISTRIA TYMPANISTRIA* (Shelley, Cat. p. 138).
Sunji, 14° 41' S. lat., 34° 50' E. long. Native name :
"Fatukotuko."
12. *PŒOCEPHALUS FUSCICAPILLUS* (Shelley, Cat. p. 139).
Limawasi and Banda. Native name : "Ngwi."
13. *AGAPORNIS LILIANÆ* Shelley, Ibis, 1894, p. 466, pl. xii.
(Shelley, Cat. p. 141).
Limawasi. Bill red; legs slaty. Native name : "Chepuli."
This pretty little Love-bird is apparently rare as well as
very local, for in the sixteen large collections of birds made
in British Central Africa, this is only the second time that
examples of the present species have been included. All

the known specimens have been met with in the Upper Shiré district, except those procured by Capt. Alexander on the Zambesi (see *Ibis*, 1900, p. 431).

14. *GLAUCIDIUM PERLATUM* (Shelley, Cat. p. 142).

Shiré R.; ♂ ♀, Banda. Native names: "*Matawese*" and "*Kaungululu*."

15. *BUBO LACTEUS* (Shelley, Cat. p. 144).

Banda. Native name: "*Linjichi*."

16. *ASTURINULA MONOGRAMMICA* (Shelley, Cat. p. 151).

Shiré R.

XIV.—On Moults and Alleged Colour-change in Birds.

By WITMER STONE.

THE article by Mr. Bonhote, which appeared in last year's volume of this Journal*, leads me to make some reply to his criticisms of my paper on "Moults" (published in the 'Proceedings of the Philadelphia Academy,' 1896), though it seems questionable whether any further discussion will result in a better understanding of the phenomena of plumage-change, since the advocates of both sides hold so tenaciously to their own views.

Rather than repeat in detail arguments that have already been fully expanded, I desire to point out some facts in connexion with the study, and to endeavour to show what has been *proven* by recent investigations.

It will be understood at the outset that, with Dr. J. A. Allen, Dr. J. Dwight, Jr., Mr. F. M. Chapman, and most other American ornithologists, I maintain that all colour-changes in bird-plumage are produced either by actual moult or by abrasion of the tips, and that there is no change of pigment in the feathers themselves.

To consider in the first place the attitude of those who differ from us, we note that the advocates of direct change of pigment have been forced to abandon their earlier standpoint—that most changes of plumage in spring-time were

* See '*Ibis*,' 1900, p. 464.